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JAPANESE CEREMONIAL ADDS COLOR TO LIFE IN HAWAII

These youthful sons and daughters of Nippon are celebrating a flower festival in Hawaii. They are dressed in the colorful costumes of the Empire of the Rising Sun (See Bulletin No. 1).

HOW TEACHERS MAY OBTAIN THE BULLETINS

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Kilauea, Hawaii's "House of Everlasting Fire"

RADIO listeners received a new thrill recently when the voice of a volcano in eruption came roaring from loud speakers. The voice, likened by listeners to a combination of "the thunder of Niagara" and "feeding time at the zoo," was that of Kilauea, one of the two great active volcanoes of the Hawaiian Islands, celebrating the Christmas season with a Fourth of July display of fireworks. Halfway around the globe thousands of visitors flocked to see one of the most brilliant spectacles this old master of pyrotechnics has ever put on.

At the bedside of Mother Earth's latest "sore throat" was Dr. Thomas A. Jaggar, eminent volcanologist, and Director of the Hawaiian Volcano Observatory. Dr. Jaggar predicted, with startling exactness, the eruptions of 1929, 1924, 1920 and 1914 through earthquake tremors which his instruments recorded. His house on the lip of Kilauea gives the scientist the right to be considered a "bedside volcano observer" in practically constant attendance on his most chronic case. While Dr. Jaggar finds time to visit other volcanic centers, notably in Alaska, he always seems to be on hand when Kilauea, or its bigger brother, Mauna Loa, experiences a "crisis."

A Wall of Red Flames

In a communication to the Washington, D. C., headquarters of the National Geographic Society Dr. Jaggar gave a vivid description of Kilauea in action in a typical eruption:

"Great fountains were spouting continuously along a fissure for a thousand feet, like a wall of red flames, and in detail they were seen to be made of incandescent, light crumbly material, yellow when it shot up and red when it came down," he writes. "The noise, a roar like surf on the rocks, was caused by gas rushing through a lava pool filling the rift, churning it to a foam, and flinging up the foamy matter to solidify as it fell.

"We proceeded across much-faulted ground to the immediate base of the rampart built by the fountains and hemming in the eastern margin of the great lava lake.

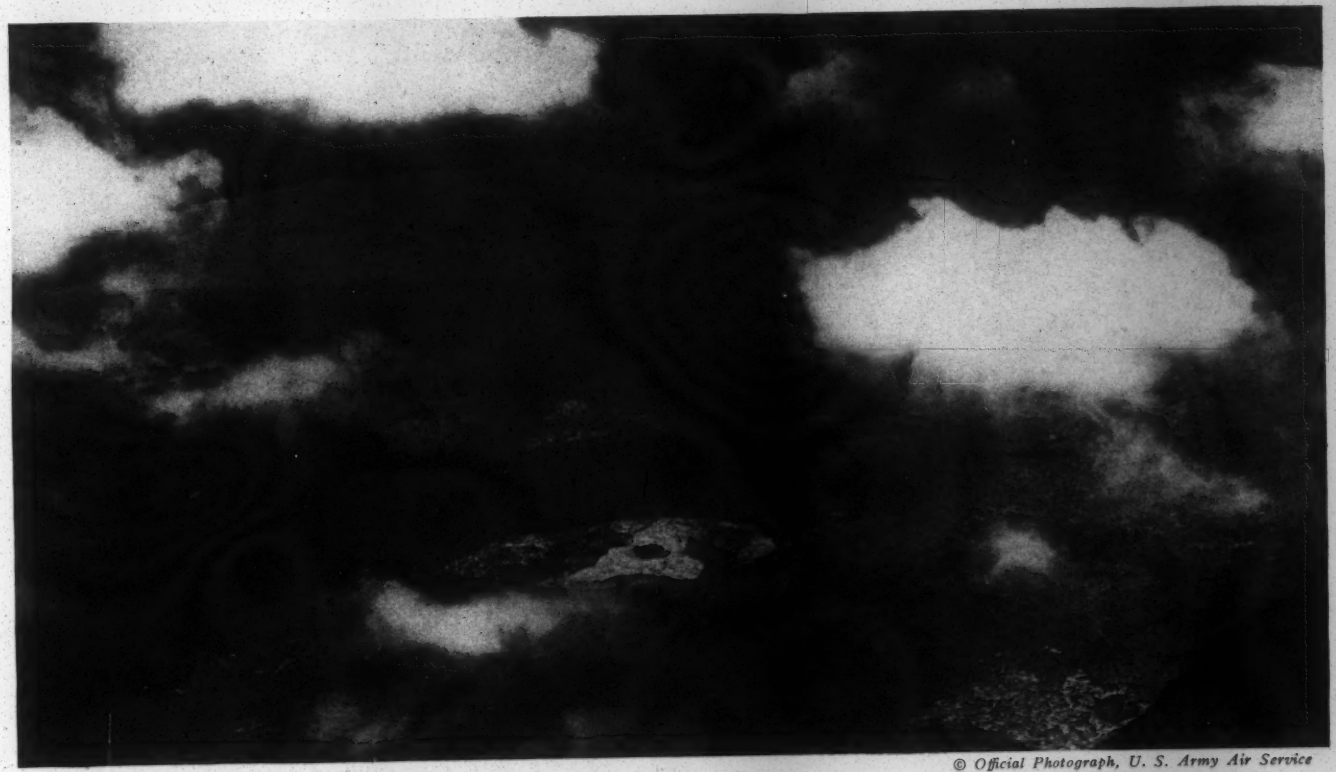
"The ridge where we stood was 50 feet above the old ground level, and 50 yards north of us stood the highest peak of the rampart wall, a singular structure when seen end on. It stood up as a narrow slab or shell confining the mighty fountains, and its height above the outside ground was about 100 feet.

Fiery River Moves 18 Miles Per Hour

"Next to it the fountain jets sprayed up continuously half again as high, the glowing soft fragments, eternally pounding down upon the rampart, plastering it with the new matter or rolling noisily down the outer slope, gilded with a mottled fiery pattern.

"Through the southwestern wall the lake had found an outlet, and here, in a gorge 40 feet wide, rushed the main lava flow, like the sluiceway of a dam. This flow, only 100 feet west of us, made a fiery river, with current estimated 18 miles per hour. The stream appeared shallow, with many standing waves and bright grottoes along its banks.

"The writer obtained one glimpse of the lake surface by climbing the rampart at the northeast end, where the summit was only 40 feet high and the fountaining



© *Official Photograph, U. S. Army Air Service*

THE FIRST AERIAL PHOTOGRAPH EVER MADE OF THE FAMOUS "FIRE PIT" IN THE CRATER OF KILAUEA

Kilauea, although 4,090 feet above sea level, does not look like a mountain at all. Its flanks rise gently to a big lava tableland, in the center of which opens Halemaumau, "House of Everlasting Fire." The air over active volcanoes makes rough flying. The aviator who took this photograph reports hard, sudden bumps, causing a continual flutter, which kept the plane rocking while passing over the pit (See Bulletin No. 1).

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World Government Changes in 1931

ONE of the world's leading monarchies became a republic; the greatest empire was well under way toward official conversion to a "commonwealth"; and one of the few remaining absolute monarchies was given a constitution—these were the outstanding changes in status among the countries of the world during 1931.

Spain's proclamation of a republic on April 14 was the most spectacular change of the year. Later a constitutional convention was held, and on December 9 the new Republican constitution was adopted.

House of Commons Votes Commonwealth

Although the term "British Commonwealth of Nations" has been used for several years in regard to the association of Great Britain and the Dominions, the former has continued by statute to be paramount, the laws of its Parliament superior to those of the other parts of the Empire. In December the House of Commons passed the Statute of Westminster, giving all the Dominions "full national status to stand beside the United Kingdom as equal partners in the dignity and responsibility of the British Commonwealth."

In Ethiopia (Abyssinia) Emperor Haile Selassie I surprised his people on July 16 by the gift of a constitution. A parliament of two houses has been set up. The United States recognized the dual kingdom of Hejaz and the Nejd, two extensive areas of the vast Arabian Peninsula.

No official change in sovereignty had taken place in Manchuria at the end of the year. Hostilities continued in that area between Japanese and Chinese.

Greenland Sovereignty Debated

Radical changes for India were discussed at the second Round Table Conference held in London, but the year ended without agreement among the many Indian minorities.

Denmark and Norway were drawn into a dispute in July when a party of Norwegian hunters raised the Norse flag over a portion of East Greenland. Denmark submitted the matter to the Permanent Court of International Justice at The Hague, and later Iceland put in a claim for the territory. No action has been taken by the Court.

By a decision of the King of Italy, acting as arbiter, Clipperton Rock, a desolate spot of land 670 miles off the Pacific coast of Mexico, was awarded to France, against the claim of Mexico. Mexican soldiers had been kept there since 1897.

A rebellion waxed and waned in Burma throughout the year. In August one of the leaders was captured, and by the end of the year hostilities had died down.

U. S. Effects Changes in Caribbean

Nearer home, the United States made two changes in its Caribbean sphere of influence. The Virgin Islands were given a civil governor and administration, replacing the Naval administration that has been in charge of the islands since their purchase from Demark in 1917. In Haiti, the United States transferred authority to the Haitian government, except in matters of public finance, health, and the gendarmerie.

In South America several clashes occurred during the year between the forces of Paraguay and Bolivia in the disputed area of the Gran Chaco. A number of commissions have considered the problem of marking out a boundary, but no decision has been reached. Division of French Guiana into a coastal strip to retain

less violent than at the south. The heat was intolerable, but, by choosing a moment when the falling of fragments was at a minimum, it was possible to scramble to the edge, look in, and then beat a quick retreat. A definite lake surface of heaving, foamy lava lay about 20 feet below the edge. It was at this lake that the Alika flow took its rise.

"The stream plunged into the sea at the Alika shore over an older flow of the same sort 14 miles from the source rift. It continued to flow as a lava river for ten days.

Lightnings Flashed in Steam Columns

"The uprush of steam where the lava made contact with the sea carried up rock fragments and sand and built a black sand cone. Lightnings were seen in the steam column. There was much muddying of the water and fish were killed in considerable numbers.

"Great raft blocks of lava, red hot or black, or red below and black above, rode along with the current, either smoothly or rolling over, as though striking on the bottom.

"The color effects at sundown at the rift source on Mauna Loa were gorgeous beyond description. Over the scarlet fountains rose the sheets of red and green flame topped with lilac fumes, against a murky green or blue-gray background. Above rose the great buff-colored volutes of cloud, with individual billows coffee-colored or brown. All of this was backed by an outer sky of deepest cobalt blue, with normal distant horizon clouds of pearly gray."

NOTICE
WALKING ON THIS BRIDGE PROHIBITED
KAPU AOLE HELE MALUNA O KEIA UAPO.
NESTA PONTE E PROBIDO PASAR QUAL QUER PESOA.
H.R.T.&L.Co.

© *Harriet Chalmers Adams*

HAWAII IS A LAND OF MANY TONGUES

This "Keep Off" sign is posted in five languages: English, Hawaiian, Portuguese, Chinese and Japanese.

Though called a mountain, Kilauea Volcano has not the slightest resemblance to a mountain, being a great cuplike depression in an extensive plain on the Island of Hawaii, largest of the Hawaiian group. In the center of this depression opens a deep throat in which red-hot lava rises and falls like the mercury in a thermometer. This pit is the famous Halemaumau, "the House of Everlasting Fire," from which flames have been erupting during the past week. Dr. Jaggar's Observatory, perched on the edge of the volcano, is maintained by public-spirited citizens of Honolulu. The entire area covered by Kilauea, and neighboring Mauna Loa, is included in the Hawaii National Park.

Note: For additional reading and pictures of our mid-Pacific territory of Hawaii see also: "Our Conquest of the Pacific," *National Geographic Magazine*, October, 1928; "Bird Life Among Lava Rock and Coral Sand," July, 1925; and "The Hawaiian Islands, America's Strongest Outpost of Defense," February, 1924.

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Lithuania Also Has a "Liberty Bell"

LITHUANIA'S first election under its amended Constitution has returned to the Presidency of that Baltic Republic the man who held the office for the last five years. The Board of Electors was unanimous in its choice of President Smetona, who has held several other important government offices. The event is of particular interest to the more than one million residents of the United States of Lithuanian descent.

Lithuania, the southernmost of the three major Baltic countries carved out of prewar Russia, borrowed many of the principles of its republican government from the United States. An incident in this connection was the presentation in 1922, by Lithuanians in America, of a "liberty bell" to the mother country in commemoration of the fourth anniversary of its independence. The bell is rung on all national holidays and days of historical significance to the country.

People Speak an Ancient Tongue

Over the present country of Lithuania, which in the fifteenth century extended from the Black Sea to the Baltic, the armies of Germany and Russia crossed and recrossed during the World War. Germans often raided the country to capture cattle and the Russians counter-attacked to gain immediate results for the moral effect elsewhere.

These fair-haired and blue-eyed people speak a language which is said by some philologists to be the oldest living language to-day. It resembles the primitive Sanskrit and is distinctly different from the Slavonic family, the Teutonic and the Latin.

The conquering nations who ruled the territory from time to time have attempted to stamp out the native tongue by requiring the children to use textbooks and prayer-books written in the Cyrillic alphabet, but they have never been entirely successful.

Ancient Capital Claimed by Poland

The ancient capital of this area, which now is slightly smaller than West Virginia, was Vilna, whose narrow and winding streets, stony pavements and horse-cars give it a quaint and almost medieval atmosphere. Though the seat of government now is Kovno, many of the great events in Lithuanian history center around Vilna in the area claimed by Poland.

The disputed southern part of Lithuania, occupied by Poland, has an area of about 10,808 square miles.

Vilna was founded at the junction of the Vilna and Vilayka Rivers by Gedimin in 1322, and is connected by railway lines with Petrograd and through Warsaw with most of the capitals of Europe.

The three former Russian provinces, Vilna, Kovno, and Suvalki, out of which most of the present state has been formed, are not very prosperous-looking country when compared with that in the neighboring German and Polish lands farther south. Much of it is marshy and covered with forests. Indeed the forests are so extensive that they constitute one of the country's greatest natural resources.

Agriculture is the chief industry, and a surplus of some products, such as timber, hides, and flax that her neighbors need, is produced.

Lithuania has a Baltic seaport in Memel. The Memel territory was taken

the old name, and a large interior colony to be known as Inini, was announced by France. Chile's government by dictator was overthrown in July and an acting president placed in charge. A naval mutiny on September 1 was suppressed and the new regime remained in power.

In Central America the year began and ended with revolutions. The government of Panama was forcibly overthrown on January 2. In December there was a revolution in Salvador which resulted in a change of regime.

New lands were discovered near the two "ends" of the earth. In the north four islands were found by the Soviet icebreaker, *Maligin*, and were claimed as a part of Franz Josef Land. In the Antarctic Sir Douglas Mawson discovered new areas of land between Adelie Land and Queen Mary Land, as well as an ice-covered island near Latitude 65 South and Longitude 103 East.

Note: Supplementary reading about Spain, the world's newest republic, will be found in "Madrid Out-of-Doors," *National Geographic Magazine*, August, 1931; "Pursuing Spanish Bypaths Northwest of Madrid," January, 1931; and "In Andulusia, Home of Song and Sunshine," March, 1929. For new material about Ethiopia (Abyssinia) see: "Modern Ethiopia," June, 1931. Haiti is briefly described in "Skypaths Through Latin-America," January, 1931. For modern Manchuria see "Byroads and Backwoods of Manchuria," January, 1932.

Bulletin No. 2, January 18, 1932.

© *Capt. A. W. Stevens*

CHRISTOPHE'S CITADEL, A WONDER OF THE WESTERN WORLD

High on a mountain in northern Haiti the Black King built this mighty fortress as a last retreat should the French return. Its construction cost from 10,000 to 20,000 lives. Last year Haitian gendarmerie, under American marine officers, cleared a trail up the mountain to the citadel. American administration has brought order out of chaos in Haiti. Gradually the various departments of government are being returned to native Haitians.

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Seaweed—Food, Fertilizer, Medicine, and Insulator

LOWLY seaweed—tangler of bathers' feet, clogger of motorboat propellers—is really an important commodity in the markets of the world. Norway has just announced that its production of kelp ash (burnt seaweed) during the first nine months of 1931 was over 10,000,000 pounds, a greater amount than in the corresponding period of 1930. About 4,000,000 pounds of this production were delivered to Norwegian manufacturers of iodine.

Japan, the leading producer of seaweed, harvested some 450,000,000 pounds of the plant in 1930. The United States imports about 5,000 tons each year, despite a seaweed "industry" on both the Atlantic and Pacific coasts.

Relished in Japan, China and Hawaii

Seaweed has been consumed as food by the Japanese, Chinese and Hawaiians for many centuries, while Irish moss and seaweed products have graced the American table since colonial days, when it was imported from England.

An early use of the weed was as fertilizer by farmers near the sea. To-day, besides serving as fertilizer and food, it is an ingredient of fine paper, knife handles and oriental curios. Kamchatka natives use its hollow stems as coils for distilleries, while Australians have discovered a species from which cloth, rope, twine and mats can be made.

Upwards of a billion pounds of seaweed are harvested annually, with nearly every country bordering the sea contributing its quota. Some British, Dutch and French manufacturers use seaweed for upholstery and mattress stuffing. Holland produces a sufficient quantity to export two to three thousand tons annually.

Demand for Japanese seaweed is so great that the natives cultivate seaweed plantations. In Tokyo Bay alone more than 3,000 people are employed on seaweed plantations. More than twenty-five species of seaweed are eaten in Japan. Seventy varieties are consumed in Hawaii, where fish and seaweed are the principal foods of the poorer natives during certain seasons.

We Use It Indirectly in Jellies and Ice Cream

In one form or another seaweed or its derivatives have appeared on nearly every American dining table. Agar-agar—a dried, partially bleached, gelatinous extract of certain species of seaweeds—is eaten in American ice creams, jellies, candies, pastries, cereal foods, and in many desserts and salad dressings.

Cosmetics may contain agar-agar, and at the drug store one may buy it in adhesive tape and soap, and mixed with medicines. Isinglass and fly paper often contain agar-agar. Fish canners use it to pack soft fish which are likely to be shattered to pieces in transportation. It has eight times the strength of ordinary gelatin and is not as readily affected by climatic changes.

Two-dollar-a-pound "Irish moss" from England lost its market in 1835, when the Mayor of Boston announced that the Massachusetts coast had an ample supply. Further investigation showed that the plant covered rocks from North Carolina to Maine. The Mayor's announcement led to the Irish moss industry at Scituate, Massachusetts, which still exists. The moss is used in making blanc mange and many other puddings, and remedies for coughs. It also is an ingredient of some kalsomines, shoe stains, shaving soaps, and dyes for calico printing.

Seaweed (dulse) was chewed in Scotland and Ireland before tobacco took its place. Now Scotch and Irish cooks use it to thicken and give a red color to soup.

from Germany by the Treaty of Versailles, but was not handed over to Lithuania until February 16, 1923. Memel is still subject to certain conditions which permit the use of the port by both Lithuania and Poland.

Note: See also "The Races of Europe," by Dr. Edwin A. Grosvenor, *National Geographic Magazine*, December, 1918; and "The New Map of Europe and the Near East," December, 1929. The latter has been published in a revised 1931 edition, containing all changes in names and boundaries, and is sold separately on linen for $1.50. A complete list of The Society's publications and maps will be mailed free to teachers upon application to the headquarters, Washington, D. C.

Bulletin No. 3, January 18, 1932.

© *Photograph from Ernest Peterffy*

LITHUANIAN COAL-SHOVELERS AT THE PORT OF LIEPAJA

So closely do the neighboring Lithuanians and Letts resemble each other in personal appearance, language, occupations, and the hardships of life that foreigners usually identify them as one. These girls are making light of some mighty dirty work.

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George Washington: Geographer and Traveler

GEORGE WASHINGTON—first geographer of the United States, and foremost traveler of his time.

These activities of the many-sided Father of His Country are epitomized on a large map just issued by the National Geographic Society as its contribution to the commemoration of the two hundredth anniversary of the birth of Washington.

First Showing All Journeys

The map is the first issued showing all the travels of Washington on a single chart. It is the product of more than a year's careful research on the part of the staff members and map makers of the National Geographic Society. These researches included the most thorough check yet made on the diaries of Washington, contemporary accounts of his travels and observations, and personal visits to many places where changed names, or duplicated names, long have left doubt about exact routes or places visited.

George Washington's journeys covered a larger area in America than those of any other official of his time. They extended from Savannah, Georgia, to Kittery, Maine. Westward they reached to the vicinity of Lake Erie, in Pennsylvania, to the neighborhood of Point Pleasant, in West Virginia, and to Gallipolis, in Ohio.

Three Sea Voyages

He traveled on horseback from Williamsburg to Fort Le Boeuf, from Mount Vernon to Boston, and he made three sea voyages, which are not generally realized, one of them to Barbados.

The map, which is being sent to The Society's membership, is printed in five colors, is 28 by 18 inches, and it adopts a novel and lucid means of showing the extensive itineraries. Washington's travels divide themselves into four periods: that of his surveying and the French-Indian campaigns; his travels to the West from 1759 to 1774; the years of the Revolutionary War, and his travels after the War, from 1784 to 1799. Small Roman numerals are used along the lines marking the routes to show in which period each route was traversed. Routes traveled more than once are marked with the numerals of several periods.

The principal highways of Colonial times are shown. Combinations of color, italic and Roman type are used to show places Washington actually visited, other places existing in his time, and places rebuilt or renamed since his time. Five inset maps show in greater detail the travels in the vicinities of Boston, Philadelphia, New York, Tidewater Virginia, and the plat of the farms about Mount Vernon in Washington's time.

Over Routes with Speedometer

Many places that tradition says Washington visited are not mentioned in the diaries of Washington or by the contemporaries of Washington. So far as records show, he did not visit the birthplace of his mother, Epping Forest. Another famous landmark where it was always claimed that "Washington stayed" is some 3 miles from the route where the records show he passed.

"The accuracy with which Washington on horseback gauged distances well may excite our wonder," writes Dr. William Joseph Showalter, in an article accompanying the map. "Often he tells in his notes how far he traveled on a given day.

Boiled laver in England, also known as sloke in Ireland and slack in Scotland, is a palatable cooked seaweed.

Japanese seaweed "plantations" produce from $150 to $300 worth of seaweed per acre. Kombu and amanori are two of the chief seaweed products which have figured largely in the development of the Japanese seaweed industry. In Osaka there are 45 kombu factories. Shredded kombu is cooked with meat and soups, and served with vegetables. Powdered kombu is an ingredient of sauces and soups and rice dishes, while kombu leaves make a popular Japanese tea.

Making a Seaweed Sandwich

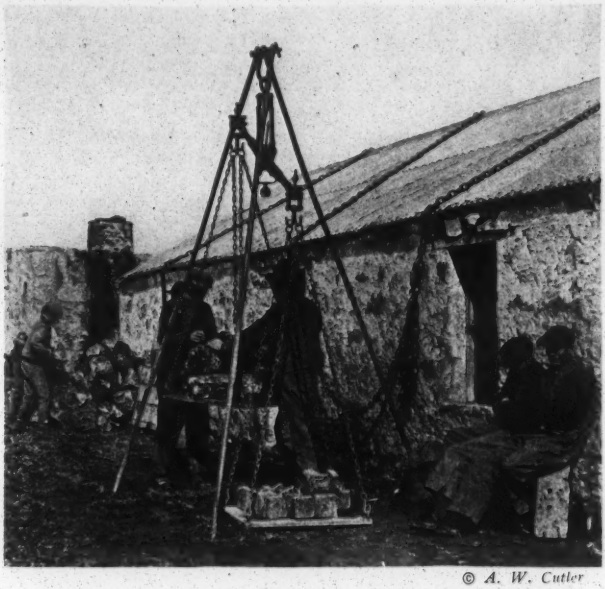
Amanori is baked, compressed seaweed. Sushi, a popular Japanese sandwich, consists of a slab of amanori on which are placed boiled rice and strips of meat. Then the sushi is rolled like a jelly roll and cut into transverse slices.

Seaweed also is the source of many acids, one of which is used in the manufacture of buttons, combs and insulating material. Other acids are used to dissolve shellac and to produce brown dyes. America's interest in its own seaweed resources dates back to pre-Columbian times when Indians used it as fish bait and for basket weaving. In 1902 a scientist discovered that seaweed on the Pacific coast contained potash, important fertilizing element.

As in the case of many other raw products, a world war was necessary to make its importance known. German potash supplies were cut off. The farms "cried" for potash, so the government set out to find a source. A company manufacturing explosives also needed a substance from seaweed as an ingredient for its products, so it built a $2,000,000 plant in California.

Groups of men first attacked the vast seaweed "plantations" with sickles, but soon steam and gasoline-propelled scows equipped with mechanical harvesting machinery dotted the Pacific seaweed fields. A dozen or more plants were established. When the Armistice was signed, the companies disbanded. To-day one remains. The others succumbed to cheaper German potash or imported seaweed products.

Bulletin No. 4, January 18, 1932.



© *A. W. Cutler*

ARAN ISLANDERS USE PRIMITIVE SCALES FOR SEAWEED

The inhabitants of this western outpost of Ireland first burn the kelp, and then cut it into blocks while still soft. When dry, it is hard and heavy. Note the inset handles of the old stone weights.

In many places where a staff member of the *National Geographic Magazine* was able to check these distances with speedometer readings, they corresponded remarkably with Washington's mileage record."

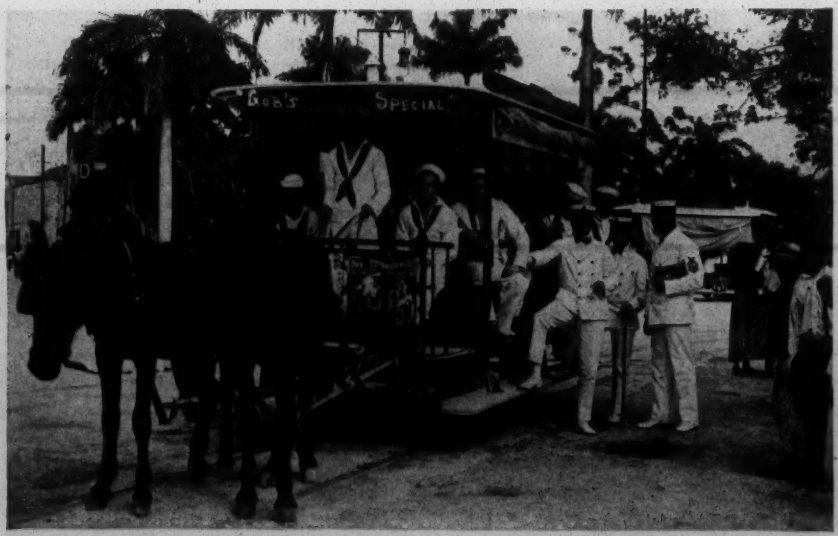
Many Frontier Forts Rediscovered

By consulting thousands of manuscripts and musty records in scores of court houses, places of importance in Washington's day, whose very names had been lost to history, were located. One of these was Logstown, in the vicinity of the meeting place of the Allegheny and Monongahela Rivers, where Pittsburgh now stands. The accepted solution was that the old town had been on Big Beaver Creek, but it was found to be miles up the Ohio from Big Beaver, at the site of the present Legionville.

One of the most arduous pieces of work in connection with the creation of the map was to locate a chain of forts established by Washington to protect the frontier from Indian depredations, forts which played an important part in the French and Indian War. The area investigated covered 15,000 square miles, or more than Massachusetts, Connecticut, Rhode Island, and Delaware combined. The work resulted in the correction of several errors that had been made in the past by the confusion of names, and it places several of the key forts on modern maps for the first time.

Note: See also "The Travels of George Washington," *National Geographic Magazine*, January, 1932. For supplementary reading see: "Washington Through the Years," November, 1931; and "The Home of the First Farmer in America," May, 1928.

Bulletin No. 5, January 18, 1932.



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THE "GOB'S SPECIAL," AT BRIDGETOWN, BARBADOS, BRITISH WEST INDIES

George Washington visited Barbados in November, 1751, upon his only voyage into a "foreign" country. These American sailors are following in the footsteps of the Father of their Country—only they are using a horse-car to save energy!